

BIOCHEMICAL SIGNAL TRANSFER USING LIPOSOMES IN A CHANNEL OF A MICROFLUIDIC DEVICE

ABSTRACT OF THE DISCLOSURE

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An integrated biological microfluidic system and method of using the same is provided. The microfluidic system includes a microfluidic device having a channel therethrough. A filter and a vesicle containing a predetermined cargo are positioned in the channel. The vesicle has outer surface carrying a bioactive molecule. A reagent
10 having predetermined stimuli therein flows through the channel and carries the vesicle to the filter. If the bioactive molecule is activated by the predetermined stimuli, lysis of the vesicle is triggered, thereby releasing the cargo. The cargo flows through the filter and engages a visual detection structure positioned in the channel downstream of the filter. The visual detection structure provides a visual display in response to exposure to the
15 cargo.